NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

SEDIMENT BASIN

(No.)

CODE 350

DEFINITION

A basin constructed to collect and store debris or sediment.

PURPOSE

- Preserve the capacity of reservoirs, wetlands, ditches, canals, diversion, waterways, and streams
- Prevent undesirable deposition on bottom lands and developed areas
- Trap sediment originating from construction sites or other disturbed areas
- Reduce or abate pollution by providing basins for deposition and storage of silt, sand, gravel, stone, agricultural waste solids, and other detritus

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion-control measures to keep soil and other material in place or where a sediment basin offers the most practical solution to the problem.

CRITERIA

Sediment basin design and construction shall comply with all applicable federal, state and local laws and regulations. In particular, all sediment basins shall conform to the requirements of the DEP Erosion and Sediment Pollution Control Program Manual (E&S Manual).

The capacity of the sediment basin shall equal the volume of sediment expected to be trapped at the site during the planned useful life of the basin or the improvements it is designed to protect. If it is determined that periodic removal of sediment will be practicable, the capacity may be proportionately reduced.

All disturbed areas shall be treated as soon as possible after construction ends to control erosion and prevent excess sediment from leaving the site.

Provisions shall be made for dewatering sediment pools if necessary for safety and vector control.

Fencing and other safety measures shall be installed as necessary to protect the public.

Due consideration shall be given to good visual resource management.

PERMANENT SEDIMENT BASINS

The design of embankments, spillways, and drainage facilities shall be according to Conservation Practice Standard PA378 (Pond), Conservation Practice Standard PA410 (Grade Stabilization Structure), or according to the requirements in NRCS TR-60 (Earth Dams and Reservoirs), as appropriate for the class and kind of structure being considered.

WASTE SEDIMENT BASINS

Waste sediment basins are used specifically to trap solids, from concentrated livestock areas, prior to entering storage, treatment facilities, or filter strips. Such basins are usually constructed of wood, masonry, or concrete, with

an outlet that detains runoff and waste on the livestock areas.

The design loadings and materials shall be in accordance with the Conservation Practice Standard PA313 (Waste Storage Facility). In addition, the waste sediment basin shall have sufficient volume, as a minimum, to store 65-percent of the peak inflow rate from a ten-year, 24-hour storm for a duration of 15 minutes. Unless otherwise substantiated, minimum runoff curve numbers for waste sediment basins shall be 85 for unpaved lots and 95 for paved lots. Basin outflow shall be disregarded in computing this storage volume.

Additional storage, based on the expected frequency of cleanout, shall be provided for manure and other solids settled within the basin. The solids storage volume shall be based on the size and number of livestock head, percent of time on the lot (the minimum shall be 25 percent), and a minimum of 10 days between cleanings. The minimum daily volume of solids per head for design purposes shall be consistent with Conservation Practice Standard PA312 (Waste Management System).

SEDIMENT BARRIERS

Sediment barriers include geosynthetic silt fences, biotextile and straw bale barriers, and rock filters. They are used to retain sediment from construction or other disturbed areas where needed for less than two years and where the drainage area is less than two acres.

SEDIMENT TRAPS

Temporary basins, also referred to as sediment traps, having drainage areas of 5 acres or less and a total embankment height of 5 feet or less may be designed according to Conservation Practice Standard PA638 (Water And Sediment Control Basin) and/or the DEP E&S Manual.

CONSIDERATIONS

Large sediment basins may have an effect on the peak discharge rate from a watershed. Planners should consider this, and take steps to mitigate any potential negative effects this may have on riparian habitat downstream from the structure.

Visual aesthetics may be a concern, especially in urban or suburban areas. To address these concerns, the basin could be designed to blend with the surrounding topography, or plantings could be proposed to screen the view from surrounding homes or buildings.

The nesting success and survival rate of ground-nesting species will increase if mowing is delayed until after the nesting season during operation and maintenance operations.

Using native species for revegetation will increase habitat diversity.

PLANS AND SPECIFICATIONS

Plans and specifications for installing sediment basins shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Provisions for controlling erosion and reducing sediment loss will be included. Specify rates of seed, mulch, and fertilizer, appropriate planting dates, and method(s) of establishment.

OPERATION AND MAINTENANCE

Permanent and waste sediment basins shall be operated and maintained in accordance with an O&M Plan that will be prepared for each installation.

Mow as need to maintain adequate vegetative cover and to prevent the establishment of undesirable species.

The sediment basin will be inspected after major storms for damage that may affect its function and performance. Any damage will be promptly repaired.